

## **REMARKS/ARGUMENTS**

### **Claim Amendments**

The Applicant has amended Claims 1, 4-5, 7, 11, 34, 37-38, 49, 75-77, and 79-80. Applicant respectfully submits no new matter has been added. Accordingly, Claims 1, 3-16, 18-35, 36-49, 51-77, and 79-81 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

### **Allowable Subject Matter**

The Applicant gratefully acknowledges the allowance of claim 74.

The Applicant notes with appreciation the conditional allowance of claims 5-10, 17-26, 28-31, 33, 38-48, 55-64, 66, 67, 70-72, 76, and 79-81. As the Examiner has suggested, claims the conditionally claims have been rewritten in independent form including all limitation of the base claims and any intervening claims. Therefore no amendments have been made to narrow the scope of the pending claims or to create any sort of estoppel.

### **Claim Rejections – 35 U.S.C. § 102(b)**

Claims 1, 3, 34, and 36 stand rejected under 35 U.S.C. 102(b) as being anticipated by Kyritsi, the paper title "MIMO capacity in free space and above perfect ground: Theory and experimental results", cited by the applicant. The Applicant respectfully traverses the rejection of these claims.

Claims 1 and 34 have been amended to include the relationship  $\sqrt{D\lambda/N}$  where  $D$  is communications distance between transmitting and receiving antennas,  $\lambda$  is communication wavelength and  $N$  is number of antenna elements. The Applicant respectfully submits that the Kyritsi reference does not disclose all of these limitations. So, the rejection is unsupported by the art and the Applicant respectfully requests the allowance of claim 1 and analogous claim 34 and the respective dependent claims 3 and 36.

Claims 11, 12, 27, 32, 49, 54, 65, 68, 69, 73, 75, and 77 stand rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al (US Patent 6,323,823). The applicant respectfully traverses the rejection of these claims.

The Wong reference is cited as disclosing a clustered antenna array comprising a plurality of antenna elements with the elements separated by a distance set in relation to communication distance. The applicant has amended independent claims 11, 49 and 77 to incorporate allowable subject matter from respective dependent claims that are indicated as being conditionally allowable. This being the case, the Applicant respectfully requests the allowance of claims 11, 12, 27, 32, 49, 54, 65, 68, 69, 73, 75, and 77.

#### **Claim Rejections – 35 U.S.C. § 102(e)**

MPEP § 2131 provides:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claims.

Contrary to the Examiner’s statement that all elements are disclosed in the Amagai reference, the element regarding embedding a data unit or adjusting the transmission control for forwarding the packets according to the obtained numeric values is not disclosed. So, the rejection is unsupported by the art and should be withdrawn.

The Examiner rejected claims 1, 3, 34, and 36 under 35 U.S.C. § 102(e) as being anticipated by Agee, et al. (US Patent 7,248,841). The Applicant respectfully traverses the rejection of these claims.

Claims 1 and 34 have been amended to include the limitation  $\sqrt{D\lambda/N}$  where  $D$  is communications distance between transmitting and receiving antennas,  $\lambda$  is communication wavelength and  $N$  is number of antenna elements. The Applicant respectfully submits that the Agee reference does not disclose this relationship. So, the

rejection is unsupported by the art and the Applicant respectfully requests the allowance of claim 1 and analogous claim 34 and the respective dependent claims 3 and 36.

The Examiner rejected claims 1, 3, 34, and 36 under 35 U.S.C. § 102(e) as being anticipated by Jia, et al. (US Patent 7,356,089). The Applicant respectfully traverses the rejection of these claims.

The Jia reference is cited as disclosing that antenna elements are set in relation to communications distance. The Applicant has reviewed the cited portion of Jia and respectfully disagrees with the Examiner's interpretation of the cited portion. Jia discloses a MIMO system for use in a rich-scattering environment and Figure 1 depicts antenna elements being displayed in a propagation environment. The only discussion regarding distance is found in column 12, lines 18-35, wherein minimum distance between points in the received constellation is discussed. The distance between the antennas (104, 108) is not discussed in the Jia reference. So, the rejection is unsupported by the art and the Applicant respectfully requests the allowance of claim 1 and analogous claim 34 and the respective dependent claims 3 and 36.

#### **Claim Rejections – 35 U.S.C. § 103 (a)**

The Examiner rejected claims 4 and 37 under 35 U.S.C. § 103(a) as being unpatentable over Jia, et al. (US 7,356,089). The Applicant respectfully traverses the rejection of these claims.

The Jia reference is stated as being different from the claimed invention because it does not disclose the specific separation of the antenna elements. The Detailed Action (top of page 4) goes on to say that the separation of the antenna elements is considered a matter of design choice. The Applicant doesn't disagree with this statement; however, since there is no disclosure of the design choice by the prior art, the Applicant respectfully submits that the design choice disclosed by the Applicant is inventive over the prior art.

Claims 4 and 37 depend from and include the limitations from independent claims 1 and 34. The Applicant respectfully submits that the Jia reference does not

disclose all of these limitations and respectfully requests the allowance of claims 4 and 37.

The Examiner rejected claims 13-16 and 51-53 under 35 U.S.C. § 103(a) as being unpatentable over Wong, et al. (US 6,323,823). The Applicant respectfully traverses the rejection of the remainder of these claims.

Claims 13-16 and 51-53 depend from independent claims 1 and 34. The Wong reference is stated as being different from the claimed invention because it does not disclose the specific separation of the clusters of the antenna elements. The Detailed Action (paragraph 9) states that the separation of the antenna elements is considered a matter of design choice. The Applicant doesn't disagree with this statement; however, since there is no disclosure of the specific separation of the clusters by the prior art, the Applicant respectfully submits that the design choice disclosed by the Applicant is non-obvious and patentable over the prior art.

The Applicant respectfully submits that the Wong reference does not disclose the limitations of claim 13-16 and 51-53 each of which include limitations from claim 1 and 34 that include subject matter from dependent claim that are deemed conditionally allowable. The Applicant respectfully requests the allowance of claims 13-16 and 51-53.

**CONCLUSION**

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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